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EFFICIENCY OF ISO 9001 IN PORTUGAL: A QUALITATIVE STUDY FROM A HOLISTIC THEORETICAL PERSPECTIVE

Abstract: *The purpose of this paper is to analyse the efficiency of ISO 9001 from a holistic theoretical approach where the Contingency theory, the Institutional theory and the Resources-Based View are integrated. The study was carried out in companies of different sectors of activity in Portugal, based on a qualitative methodology (interviews). The fact of the interviews having been undertaken under an ISO 9001 structure made it easier for companies to grasp the issues under investigation. An ISO 9001 characterisation was carried out on a theoretical framework approach and findings point out efficiency gains and revealed that the absence of ISO 9001 would work as a competitive disadvantage. The contribution of this research aims to reinforce the state of art as concerns the theoretical scope of analysis of these issues enriched by the case study achievement.*

Keywords: *ISO 9001, efficiency, performance, institutional theory, contingency theory, RBV, efficiency, effectiveness*

1. Introduction

Within the Quality Management (QM) paradigm, ISO 9001 is arguably the most influential contribution that there has been to date. By late 2010, over 1,100,000 ISO 9001 certificates had been authorized in a total of 178 countries all over the world, thus more than doubling the number of certificates compared with the figure for the end of the year 2000, a year during which a new version of the standards was launched, and by the end of which there were a total of 457,834 such certificates (ISO 2010). As a result, there have been many empirical works in academic literature which have analysed the impact of this metastandard from very different standpoints (Heras-Saizarbitoria *et al*., 2011). As the academic understanding of ISO 9000 has increased, the focus of research has shifted from the analysis of drivers of certification to the analysis of more complex issues such as the internalization of ISO 9000 standards (Heras-Saizarbitoria *et al.*, 2011, 2009).

Under this scope of analysis one rises many investigation questions concerning the characteristics, size, culture and placement of the organization in the environment and in the market. According to these paths, literature review was developed and from it many relevant propositions were taken. It must be stresses that the purpose of this paper is to measure the efficiency of ISO 9001 on management, and furthermore, its association with the organization financial performance, under a holistic theoretical approach. The development of this study was achieved according to the following

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procedures: from the initial research questions literature review was started. Upon it, the most relevant propositions were taken and identified (by numbers); according to their contents these literature suggestions were aggregated in assertions that were inter connected to the initial research questions. Some relevant investigation questions overcame enabling this case study that was achieved on a qualitative methodology (interviews) in companies of different sectors of activity. Its goal was to evaluate organizations perception about the referred issues – characteristics, size, culture, involvement and financial results.

For that purpose, the remainder of this paper is arranged as follows. Following this introduction (1), the holistic theoretical framework and literature review (2) are analyzed. From this the research propositions are posited. Next the methodology (3) steps and data observation follow – from the research questions till the results obtained. At last the conclusions (4) aresynthesized.

2. Theoretical framework and literature review

The holistic theoretical framework proposed in this article integrates the Contingency theory, the Institutional theory and the Resources-Based View.

Contingency Theory can be classified as belonging to the class of behavioral theories and argues that there is no ideal or optimal way to manage. Wiio and Golhaber (1993) summarize: contingency may arise from leadership factors and Fiedler (1992) treats them as function of different variables within the organization including human resources; elements belonging to the decision-making process that Vroom (1992) names as factors of motivation and involvement of the employees; standards of behavior (Smith 1984) that are applicable in certain cases and translate some power. For Somsuk (2010), contingency is defined through a combination of ideas: there is only one way to well manage an organization - drawing a model related to the environment; so, effective organizations have an adequate adjustment to it and to its subsystems; the needs of the organization are better satisfied as they think best; at last the management model should be appropriate both to the tasks to be performed and to the nature of the group work.

Institutional theory considers the more intrinsic aspects (norms, rules, regulations procedures and routines) of the structure of the organization (Scott, 1995). In brief, one could say that the guiding elements of institutional theory are: the basis of compliance, the mechanisms of action, the logic of operation, the indicators of the performance framework and the legitimacy (Scott, 1995). Depending on the type of organization concerned - regulatory, normative or cognitive - the predominant features are defined. Regulator means that the indicators of action are based on existing laws and regulations associated with a punition regime. Normative type means that certification will constitute the guiding principles. Cognitive type has to do with indicators provided by a comparison to others or to different environments, and may be the case of mimetic isomorphism. Companies many times seek legitimacy through processes of isomorphism - similarity between the internal characteristics of the organization and its environment. Firms are open systems with communication processes that interact with other organizations and they are a direct output of its institutional environment (Levitt and Nass, 1989; Lowrey, 2005). The mimetic isomorphism supposes that the organization has a tendency to imitate other similar and successful organizations (Levitt and Nass, 1989; Chua and Petty, 1999; Lowrey, 2005; Leiter, 2005) considered as a model (O'Connor *et al*., 2004). The coercive isomorphism is a form of coercion by a third party (State, Trade Unions, clients or suppliers) and can reveal itself through the

existence of regulations (Levitt and Nass, 1989; Chua and Petty, 1999; Lowrey, 2005; Leiter, 2005). The normative isomorphism stems from the widespread applicability of standards across classes of professionals and recognizes that this class has an important role in disseminating certain kind of orientation (Levitt and Nass, 1989; Chua and Petty, 1999; Lowrey, 2005; Leiter, 2005).

The RBV theory suggests that the organizations are active and reactive agents. It stresses that the use of specialized resources are not replicable in other organizations because they have very peculiar situational frameworks for its management (Chandler, 1962; Rumelt, 1984; Wernerfelt, 1984). This helps to create opportunities for diversity and real competitive advantages. The fundamentals of these resources can be based on knowledge (knowledge based) and the consequent power competence based from (Hamel and Prahalad, 1990). Somsuk (2010) subdivided it into explicit knowledge or information and tacit knowledge or expertise. Teece *et al*., (1994) and Dirickx and Cool (1989) mentioned the based dynamic capacity that has to do with change. Thus, business strategy of any organization depends on the resources whose use can be derived in specific skills (Oliver, 1997) and its ability to maintain the routine production over time (Wernerfelt, 1984).

Regarding the literature review, fundamentals for this study were either international or national studies. As to international contributions many of them associated quality to performance: Haversjo (2000), tries to identify some relationship between organisations' profitability and the quality management system, Casadesus *et al*., (2001), Chong and Rundus (2004) and Martinez and Jimenez (2008), made questionnaires about it. For a similar effect Kujala (2002), used the interview. As to studies carried out in Portugal, a qualitative, a quantitative methodology or a mixed way of both was used. Furtado (2002) purpose was to measure the impact of certification on productivity and efficiency of materials used. He found that certified companies register a bigger growth of their turnover and productivity based on the materials used, while it seems that there is a greater difficulty in meeting expectations as to labour productivity. Pereira (2005) studied the factors of competitiveness and business performance through a model of analysis using both descriptive multivariate and correlation analysis and concluded that quality and technology are very relevant depending on the type of industry (The use of the theoretical framework set out in the present research study was not a target of the author). Ribeiro (2006) decided to analyse the relationship between certification and financial performance and concluded that the antiquity of organisations' certification was connected to performance. A rather interesting work was carried out by Sousa (2006) on a completely different type of activity – tourism with the aim of relating the cultural aspect to performance and ISO 9001 certification. Findings showed that the involvement of the management, conducting internal audits, implementing corrective actions and also training are the key for success. Carvalho (2008) focused on TQM practices in Portuguese companies through quantitative methods in order to analyse the performance of organisations that adopt TQM associated with other management tools. As conclusion he said that the success of TQM implementation should be divided by companies and clusters: (i) highly committed, (ii) moderately committed and (iii) little committed with TQM practices. Results indicate that there is no link between TQM practices and other management philosophies to explain business performance. Although only a small proportion of companies use TQM practices, a large part of the Portuguese business is just quality certified ISO 9001. Sampaio (2008) used both tools – quantitative and qualitative - and results demonstrated that certified companies based on internal motivations show higher profits than those certified

companies on external motivations. Sampaio (2008) and Ribeiro (2006) used the database of the "500 Biggest and Best" – current edition of the Expresso Publishing, previously Revista Exame. The tools used in these studies were quantitative – OLS, SPSS, clusters and multivariate analysis – and qualitative. As already mentioned about other authors this author did not use any theoretical framework approach in his study.

From the elements belonging to the above referenced studies, those that are closer to the present research either as to the methodology or as to the contents are from (Häverjö, 2000; Kujala, 2002; Heras *et al.*, 2002, 2008; Sousa, 2006; Ribeiro, 2006; Sampaio, 2008).

3. Methodological approach

3.1 Start up

The theoretical research suggestions suggested a multiple case study (Yin, 2009). It means the diverse descriptions and narratives concerning a single unit of analysis may be replicated and a final cross analysis of results will be done. Thus, the qualitative analysis option will be guided by the below described paths. The initial research questions were the motivation for literature propositions; the units of analysis will be defined; the interconnection of the literature propositions (assertions) will emerge. At last the establishment of a criterion for the results interpretation will be considered. Data will address the collection of information through semi structured interviews. The sample will disclose the companies where these interviews were achieved. Finally the results in a "cross case analysis" (Yin, 2009) will be analysed and ascertained with the defined criteria enabling pertinentconclusions.

3.2 Research questions

The objectives of the initial research questions, next described, motivated the literature review: (i) characteristics and reasons for companies to adopt quality management practices; (ii) the size (assets, sales or number of employees) of the organisations implies quality certification, or an inner belief felt; (iii) culture of the country and of the organisation and quality management; (iv) cost accounting records help organizations to better manage quality; (v) kind of changes in the organization after quality certification; (vi) Quality Management System and the financial results. Under this approach, literature review allowed many propositions.

3.3 Propositions and assertions from literature

Quality, performance and associated propositions are summarised in Table 1. It should be clarified that the same research question may have standpoints and frameworks covering different parts of the same study. For example, question (v) concerning changes in the organisation after ISO 9001 implementation with impact on the structure (organisation and quality), on the process (Process of ISO 9001 implementation) and on its effects (Effects of the quality process), may be considered in three different chapters.

The above transcribed table considered the topics of literature review connected with the initial research question and the corresponding number of literature propositions. Their articulation forming assertions is below described Table 2.

As previously mentioned, organisations that have a dynamic and flexible organisational structure (Kanter, 1989) are more likely to implement a quality management system. Dale (1994) argues that these organisations will have, procedures, controls and monitoring instituted to ensure a quality management system (something very institutional, as to Wiio (1993). It may perhaps be concluded that ISO 9001 certification helps organisations to have a better defined structure (assertion a1).

Nevertheless, it has also been suggested by (Schein, 1992; Kotter and Heskett, 1992; Lindby *et al.*, 1999) that organisations culturally more open would be better hosters of the quality process. Hence, from the articulation of literature propositions (p6:p10), either as to strategy or as to the visibility that the company gets after certification, it may be stated that a stronger quality culture is recorded after that process (assertion a2). ISO implementation process will now be considered Table 3.

Table 1. Research questions and propositions

Research Questions	*Literature Review*	*Proposition No.*
I	Process of quality implementation Effects of the quality process	16 17,18,19
Ii	Organisation and quality Effects of the quality process	2 25
Iii	Organisation and quality Process of quality implementation	6,9,10 12
Iv	Process of quality implementation Effects of the quality process	20 21
V	Organisation and quality Process of quality implementation Effects of the quality process	1,3,4,5,7,8 11,13,14,15 22,23,24
vi	Effects of the quality process	26,35

Table 2. Assertions a1, a2 – Organisation and quality

Literature propositions (p)	Assertions
1 Typically, changes take place in the organisation after quality certification (Heras et al., 2008) *2 The decision to certify the organisation can be taken either by the will of top management or by the market itself (Wiio and Goldhaber,1993; Tolbert and Zucker, 1996; Wiele and Brown, 2002)* *3 Organisations, after certification, by becoming more formal according to an ISO standard, may feel that their structure is more agile (Benson et al., 1991; Germain and Spears, 1998).* *4 Usually, the more organisations specialise in a particular product, the more they should feel the need for quality management in that product (Benson et al., 1991; Germain and Spears, 1998).* *5 When* organisations *choose to decentralise, they may ease the system of quality management (Benson et al., 1991; Germain and Spears, 1998).* *6 After being certified, organisations may believe more in their management process (Schein, 1992)*	***a1 the structure of ISO 9001 certified organisations, may be more enhanced***
7 After being certified, organisations feel that structures and processes are more visible (Schein, 1992; Argyris and Schon, 1996) *8 Strategies can be better defined after certification (Schein, 1992; Argyris and Schon, 1996)* *9 The culture of quality after certification is different in the organisation's culture (Kotter and Heskett, 1992)* *10 The culture of quality, if absorbed by all employees, becomes part of the organisation's culture (Kotter and Heskett, 1992; Lindby et al., 1999)*	***a2 ISO 9001 may contribute to a culture reinforcement***

Table 3. Assertions a3: a5 - ISO 9001 implementation process

Literature propositions (p)	Assertions
11 Present organisations, when recruiting their employees, should require in their CV some knowledge on quality (Dillard and Tinker, 1996). *12 The principles and guidelines of quality are best attained if the strategy is measurable and shared by all (Mc Adam and Oneill, 1999; Kaplan and Norton, 2001; Zahirul, 2003)* *13 Following certification, the organisation's structure is usually reorganised (Hammer and Champy, 1993)* *20 The consideration of certification costs as an intangible asset could facilitate quality management (Kaplan and Norton, 1991; Heskett et al., 1994; Huselid and Becker, 1998)*	***a3 after ISO 9001certification organisations may develop better management practices***
14 After certification, employees feel usually more involved in their activity (Garvin, 1988; Juran, 1989; Deming, 1991) *15 Top management, after quality certification, is more committed (Imai, 1986; Neergard, 1997)* *16 Customer expectations are best understood and satisfied after certification (Crosby, 1979; Feigenbaum, 1991; Dean and Bowen, 2004)*	***a4 with quality certification organisations may register a more motivated human structure*** ***a5 with ISO9001 quality there is greater customer loyalty***

Top management should involve the employees of the organisation (Mac Adam and Oneill, 1999; Kaplan and Norton, 2001; Zahirul, 2003). For Dillard and Tinker (1996), organisations should require a prior knowledge on quality of their employees as the best way to have a comprehensive engagement (this way, it would be easier to share the quality strategy with the remaining hierarchy (Neergard, 1997)) and ability for change (Hammer and Champy, 1993). Quality process effects will raise expenditures which to be better managed, might be considered, as an intangible assets (Kaplan and Norton, 1991; Heskett *et al.*, 1994; Huselid and Becker, 1998). This way, best management practices would emerge (assertion a3). As previously mentioned, employee involvement is critical, because their efficiency is relevant to the financial result (Imai, 1986; Garvin, 1988; Juran, 1989; Deming, 1991; Lingle and Scheimann, 1996). Certified organisations may evidence a more motivated human structure (assertion a4) and the quest for continuous process improvement is a natural event, leading to customer satisfaction. This is the common thread of the quality process (Crosby, 1979; Feigenbaum, 1991; Dean and Bowen, 1994). So, the fifth statement (a5) is mentioned considering that a greater customer loyalty (assertion a5) arises after the quality process. But some other effects may arise.

The effects of ISO 900 implementation

The effects of quality certification (Table 4) may be of a non-financial nature (assertions a6:a7 - first part of the table), and of financial nature (assertions a8:a10).

As to the former some authors argue that organisations seek certification because they perceive it as a competitive advantage (Porter, 1985; Senge, 1994; Basu, 1997; Stern, 2001) reason why some elect the market (Oakland and Tanna, 2007) leading to assertion a6, and others elect the customers (Lingle and Scheimann, 1996; Zairi, 1996). One thing seems for sure: quality focus must come from the top management (assertion a7).

Table 4. Assertions a6: a10 – Quality process effects

Literature propositions (p)	**Assertions**
17. Quality certification may be perceived as a competitive advantage (Porter, 1985; Senge, 1994; Basu, 1997; Stern, 2001) *18. In some instances, the market was the reason for quality certification (Pun, 2002; Taylor, 2003; Chong, 2004; Gore, 2004; Ortiz, 2006; Ntungo, 2007; Oakland and Tanna, 2007)* *25. When the organisation's management feels that certification relates to the financial performance, it is more successful (Haversjo, 2000; Hendricks and Singhal, 2000; Heras et al., 2002; Sampaio, 2008)* *19. Success is explained by top management commitment to quality certification (Hofstede, 1991; Adam et al., 1997; Schein, 1999; Lagrosen, 2003)*	***Non-financial*** ***a6 a large part of quality certifications is driven by the market*** ***a7 the focus of quality must come from top management***
21. If organisations could consider quality as an intangible asset, very likely, the situation of decoupling would be mitigated (Westphal and Zajac, 1994; Tolbert and Zucker, 1996; Wiele and Brown, 2002). *22. Organisations, should have an immediate accounting of quality costs (Kaplan and Norton, 1991; Ittner and Larcker, 2003; Yang, 2008)* *23. Quality costs should be presented according to their nature – in terms of prevention, assessment and faults (Yang, 2008).* *24. Timely accounting information provides clues to quantify quality (Shirley, 1997)* *26. Quality certification is decided according to the time of the product life required (Stern, 1991; Chenall, 2003; Walsh, 2006)* *27. Organisations that follow measures of accounting agreed with quality management have better performance (Kotter and Schlesinger, 1979; Schonberger, 1986; Keep, 1989; Bjornenak and Olson, 1999; Lin and Johnson, 2002)* *28. Quality certification, may provide some improvement in performance indicators (Chenall, 2003; Walsh, 2006; Ross et al., 2008)* *29. Usually performance indicators used by organisations are: sales growth, return on assets (ROA) and return on equity (ROE), financial autonomy and net income (Kaplan, 2001; Walsh, 2006; Ross et al., 2008)* *30. Organisations that use non-financial tools like BSC, TQM, ISO among others, to measure the management quality, end up having a better performance (Zairi, 1996; Weldeghiorgis, 2004)* *31. Financial measures are the sufficient measure to assess management performance (Zairi, 1996; Weldeghiorgis, 2004).* *32. Organisations' financial information is one of the most important (Zairi, 1996; Lingle and Scheimann, 1996)* *33. Financial measures should be the necessary and sufficient to explain performance (Zairi, 1996; Weldeghiorgis, 2004)* *34. Employees' efficiency is relevant to explain financial performance (Lingle and Scheimann, 1996; Zairi, 1996)* *35. Customer satisfaction is critical (Scheimann and Lingle, 1996; Zairi, 1996)*	***Financial (Immediate)*** ***a8 costs related to quality may be significant*** ***a9 good practices of management may create conditions for a good management performance*** ***(Mediate)*** ***a10 a good management performance can lead to a good financial result***

As to a financial nature, literature reveals that expenditure on quality should be handled carefully (Yang, 2008) because organisations should know how to manage the causes and consequences of their errors (Yang, 2008; Ittner and Larcker, 2003; Shirley, 1997), in order to ensure the continuity of their business. Quality expenditures may be significant (assertion a8). Companies that have an accounting record agreed with the quality record, end up having better performance than the others (Kotter and Schlesinger, 1979; Schonberger, 1986; Keep, 1989; Bjornenak and Olson,

1999; Lin and Johnson, 2002). It sounds that good quality management practices may create conditions for a good management performance (assertion a9); in addition some principles of motivation and involvement from the top of the hierarchy (Zairi, 1996; Weldeghiorgis, 2004; Kaplan and Norton, 2001; Walsh, 2006; Ross *et al.*, 2008) should contribute to a good financial result (assertion a10).

3.4 Units of analysis

The selection of Portuguese listed companies has to do with their initial public offering (IPO) and because they are more rapidly in the global market (Gore, 1994; Dawson, 2009). These companies are the most identifiable in terms of information present on line (in a special web site).

Potential investors or stakeholders (Peteraf and Stanley, 1997; Michael, 2001; Phillips, 2003) may use it to make decisions. In Spain, Nicolau and Sellers (2002), confirm that quality certification may be associated, in listed companies, with the yield per share. In Portugal, Beirão and Sarsfield (2002) analysed the impact of ISO 9000 on the share price and concluded that the previous knowledge of quality certification to happen in a company - has a positive effect on its valorisation. In America, Ferreira (2008) posits that the securities exchange market is likely to see prices change, according to the announcement of certification of its companies but the positive correlation is observed only in large companies. In China, Bu (2007) does not share the same opinion concluding that this has to do with the level of indebtedness. Yet at the time of disclosure, quality certification reveals as being a performance bonus, and, has a positive impact on the valorisation of its capital. In short, it seems that the value of organisations after ISO certification becomes more credible to all stakeholders (Chemmanur and Paeglis, 2004). So from the Portuguese website of stock exchange companies named CMVM (accessed on February 25, 2010) the financial elements relating to listed companies were withdrawn, identifying, individually, the ones ISO 9001 certified. Financial companies (banks and the like) and sports companies (Footbal Co´s - Benfica, Porto and others) were not considered because the type of management does not fit the scope of this analysis. These organisations belong also to Euronext being classified by an ICB acronym meaning – industry classification benchmark. ICB is a detailed and comprehensive structure for the sectors and respective industry, facilitating the comparison across companies through the economic activity classification. In parallel a publication of certified companies (*Guia de Empresas Certificadas* - Certified Companies Guide – *Edition Cem Palavras* 2010) identified the construction and food sectors, in 2010, in Portugal, as the most relevant in terms of Quality Management System.

Thus, the following sectors will be considered: ICB 2350 – Construction (where two companies will be selected) and ICB 5330 – Food and retail (where two companies will be selected). In addition, to screen for desired effects, and to grant greater sustainability to the results (Yin, 2009), it was also considered a sector without ISO 9001 certification – ICB 5550, concerning "media" where two companies were also selected. These companies, totalling six, belonging to this case study, were selected according to factors that could facilitate the address to them namely the openness and availability to meet academic demands.

3.5 Propositions inter relation

The literature review enabled a framework spread out by, at least, three different management theories: institutional, contingency and resources based view (RBV). The logical connection between the propositions interrelation resulted in assertions, that underlie the purpose of this research (Figure 1).

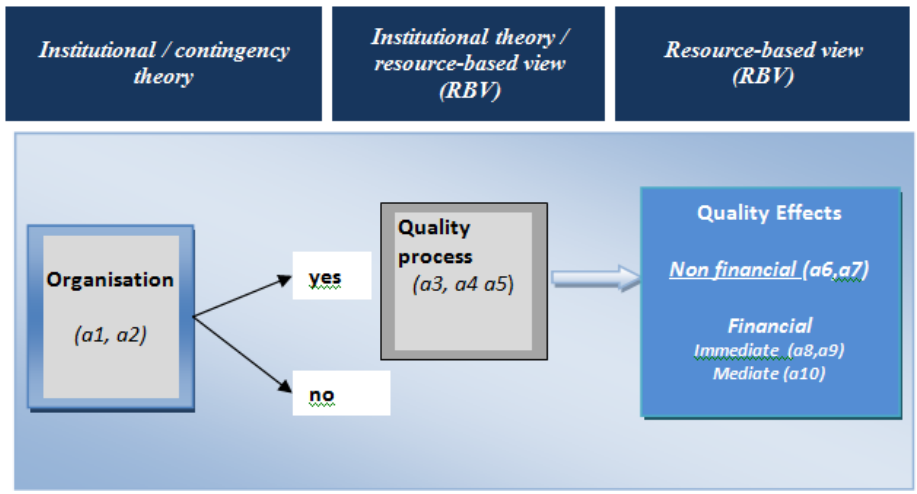


Figure 1. Theoretical approach of the Model of Analysis

The interpretation of this model follows this flow of ideas:

Institutional and/or contingency theory (a1-a2): thus, the organisational structure (a1) is connected to the cultural nature (a2). These elements may be of institutional or of contingent nature.

Institutional theory/RBV (a3 - a5): the mentioned assertions (a3:a5) arise, referring to the implementation and motivation of good quality practices: after ISO 9001 certification, organisations can develop better management practices (a3) and a more motivated human structure (a4) resulting in greater customer loyalty (a5). These facilities are of institutional or of a resources perspective.

Resources View - RBV (a6 - a10): a large part of quality certification is driven by the market (a6) and the focus of quality should come from top management (a7). Subsequently, the financial effects are a consequence of a quality process and costs related to quality may be significant (a8) but good practices of quality management may create conditions for a good management performance (a10).

To test this model an empirical case will be oriented by the following criteria.

3.6 Criteria for results comprehension

As before mentioned different theories can engage this issue: from the institutional (Scott, 2001; Oliver, 1997) to the contingency (Wiio, 1993) or to the resources-based view RBV (Wernerfelt, 1984). Any of these may be crossed by the stakeholders theory (Phillips, 2003). In Figure 2, the different circles intend to interpret the results.

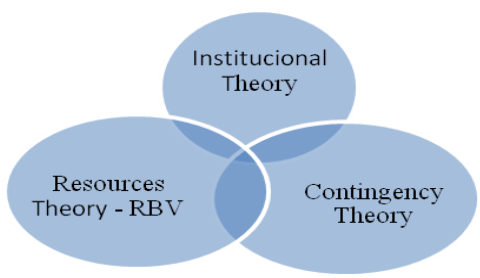


Figure 2. Criteria for interpreting results

From the descriptive interpretation of results, references to the theoretical foundation will be highlighted considering their greater or lesser extent, according to the degree of frequency in which the term is used. This will allow defining the sequential positioning of theories through the size of the representative image. The intersection of

theories means a double or triple simultaneous theoretical interpretation. Oliver (1997) named cultural factor as an institutional element; yet it may also be considered as a resource enabling the process of quality implementation - RBV (Schein 1999) and may also be taken as something contingent if associated to the changing events of our century (Dawson 2009).

3.7 Data

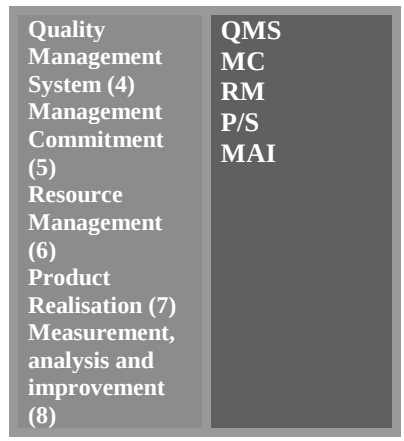
The procedures concerning the semi-structured interviews (Yin, 2009) undertaken in Portuguese companies were the following.

3.7.1 Interviews achievement

Interviews were developed according to a guide, prepared according to the logical sequence of subjects formatted in the ISO 9001 structure. A week before the interview taking place, a copy of the guide was sent by email to the interviewees. The interviews were done from June to October 2010; their duration was 60 to 90 minutes and were carried out, both in listed companies with ISO quality principles and without ISO quality certification. The latter situation was intended to make a counterpoint to the desired effect. Interviewed people were either representatives of the elements of organisations' top management and or professionals responsible for Quality Management.

3.7.2 Interview guide elaboration

The preparation of the interview guide had two basic stages: the first was the definition of its structural archetype and the second was the definition of its contents.
It had two versions to be presented in quality certified and non-quality certified companies. It was based on the abovementioned Model of Analysis. Its topics contents, formatted in the ISO 9001 structure, were the result of the framework of assertions (a1: a10) created upon literature propositions (propositions: 1 to 35). Therefore, it is essential to address its key points, identified in 4.5.6.7.8., meaning respectively:



When combining ISO 9001 items to the assertions built, propositions from literature are related.

Table 5. ISO 9001 contents, related assertions and proposition

Performance
Quality Management System
Management Commitment
Resources
Product / Service
Measurement, Analysis, Improvement

All assertions listed from one to ninth, concern non financial performance (A). The tenth assertion concerns financial performance (B). This way topics of the interview guide, stand on the right side and on the left one stands the theoretical basis (Table 6, Table 7). *A – Non-financial performance, B - Financial performance.*

Table 6. Propositions and interview guide questions about Quality Management System

Quality Management System – QMS Propositions	Interview guide QMS
• *Usually, there are changes in the organisation after quality certification (Heras et al., 2008) (p1)* • *The decision to certify the organisation can be taken either by the will of top management or by the market itself (Wiio and Goldhaber 1993; Tolbert and Zucker, 1996; Wiele and Brown, 2002) (p2)* • *After certification, organisations, due to the fact that they become more formal by following an ISO standard, may feel a more agile structure (Benson et al., 1991; Germain and Spears, 1998) (p3)* • *Usually, the more organisations specialise in a particular product, the more they should feel a need for a quality management in that product (Benson et al., 1991; Germain and Spears, 1998) (p4)* • *When organisations opt for decentralisation, they may ease the system of quality management (Benson et al., 1991; Germain and Spears, 1998) (p5)* • *Customer expectations are better understood and satisfied after certification (Crosby, 1979; Feigenbaum, 1991; Dean and Bowen, 2004) (p16)*	1 How do you classify, after certification, the definition of quality policy and objectives by top management (p1+p3) 2 Do you consider that, after certification, the management process has more self confidence (p2) 3 Do you consider the consequences of a process of quality certification advantageous for the organisation (p3) 4 Classify the functional reorganisation after the implementation of the quality process (p3+p4+p5) 5 Do you consider that, after certification, workers are more involved in the management process (p1+p2) 6 With certification, customer expectations are better understood (p16)

Table 7. Propositions and interview guide questions about Top management commitment

Management Commitment – MC Propositions	Interview guide Management Commitment
• *After certified, organisations may believe more in their management process (Schein 1992) (p6)* • *After certified, organisations feel that structures and processes are more visible (Schein, 1992; Argyris and Schon, 1996) (p7)* • *Strategies can be better defined after certification (Schein, 1992; Argyris and Schon, 1996) (p8)* • *After certification, quality culture is different in the organisation's culture (Kotter and Heskett, 1992) (p9)* • *If absorbed by all employees, the culture of quality becomes part of the organisation's culture (Kotter and Heskett, 1992; Lindby et al., 1999) (p10)* • *Quality principles and guidelines are best attained if the strategy is measurable and shared by all (Mc Adam and Oneill, 1999; Kaplan and Norton, 2001; Hoque, 2003) (p12)* • *After certification, the organisation's structure is usually reorganised (Hammer and Champy, 1993) (p13)*	7 How do you assess the involvement of top management on the quality factor (p6) 8 How do you classify the importance of the market for the company's certification (p7) 9 How do you assess, after certification, the agility of the organisation when faced with new situations (p7+p8) 10 How do you classify the description and organisation of functions in the hierarchy after certification (p9+p10+p12) 11 Do you consider that quality certification relates to some centralisation of power in the organisation (p12) 12 How do you classify the progress of the top management performance after certification (p8+p9+p13) 13 How do you classify the quality culture in the organisation after certification (p8+p10) 14 After certification, do you consider that quality culture is identified more with the organisation's culture (p10)

Having identified the questions relating to the Quality Management System, follow the ones about Management Commitment

A quality process implementation is supposed to have a critical involvement of organisations' top management.

Table 8. Propositions and interview guide questions about Resources

Resources Propositions	Interview guide Resources
• *After certification, employees feel usually more involved in their activities (Juran, 1989; Garvin, 1988; Deming, 1991) (p14)* • *Workers' efficiency is relevant (Scheimann and Lingle, 1996; Zairi, 1996) (p35)* • *Top management, after quality certification, is more committed (Imai, 1986; Neergard, 1997) (p15)* • *When recruiting their employees, today's organisations should require some knowledge on the quality on their cv (Dillard and Tinker, 1996) (p11)* • *In situations of greater success in this action, it was top management that chose the way of quality certification (Hofstede, 1991; Adam et al., 1997; Schein, 1999; Lagrosen, 2003)* (p19) • *The consideration of certification costs as an intangible asset could facilitate quality management (Kaplan and Norton, 1991; Heskett et al., 1994; Huselid and Becker, 1998) (p20)* • *If organisations could consider quality as an intangible asset, the situation of decoupling would probably be mitigated (Westphal and Zajac, 1994; Tolbert and Zucker, 1996; Wiele and Brown, 2002) (p21)* • *In organisations, there should be an immediate accounting way of identifying quality costs (Kaplan and Norton, 1991; Ittner and Larcker, 2003; Yang, 2008) (p22)* • *Quality costs should be presented according to their nature – in terms of prevention, assessment and faults (Yang, 2008) (p 23)* • *Timely accounting information may provide clues to quantify quality (Shirley, 1997) (p24)*	<u>Human</u> 15 Do you consider that Quality implementation facilitated employees' motivation (p14+p35) 16 Human resources are recruited considering knowledge on "quality" in their curriculum (p11) 17 What is importance ascribed to the evaluation of employees' functional skills (p14+p35) <u>Material</u> 18 Does identification and quantification of quality costs assume importance in the company (p15 + p19) 19 Do you consider significant to classify the expenditure on quality as an intangible asset (p20) 20 Quality costs are analysed in detail – prevention, assessment and faults (p24+p25) 21 Is the accounting department able to register all the movements that cause quality costs (p24) 22 How do you classify the connection of quality certification to organisation's sales (p19) 23 How do you classify the connection of quality certification to the organisation's financial performance (p24)

Resources both human and material are needed for an action of this nature and will be analysed next.

After having started a process of quality certification, assuming the involvement of top management and the existence of human and material resources, the definition of the product or service, according to the expectations outlined, will be the goal of this entire process.

Table 9. Propositions and interview guide questions about Product/Service

Product / Service Propositions	Interview guide Product
• *Quality certification is frequently decided because the moment the product life has required so (Stern, 1991; Chenall, 2003; Walsh, 2006) (27)* • *Quality certification may be seen as a competitive advantage (Porter, 1985; Senge, 1994; Basu, 1997; Stern, 2001) (p17)* • *In some cases, the market was the reason for quality certification (Pun, 2002; Taylor, 2003; Chong, 2004; Gore, 2004; Ortiz, 2006; Ntungo, 2007; Oakland and Tanna, 2007) (p18)* • *Customer satisfaction is crucial (Lingle and Scheimann, 1996; Zairi, 1996) (p36)*	24 Does certification depend on the time of the product lifecycle (p26) 25 Do you consider that certification is a competitive advantage for the organisation (p17) 26 Do you consider this management option for certification as a market need (p18+p35)

To keep up the quality management system many instruments of measurement, analysis and improvement will contribute to its maintenance.

Table 10. Propositions and interview guide questions about Measurement Analysis and Improvement

Measurement Analysis Improvement Propositions	Interview guide Questions
• *Organisations that adopt the measures of accounting records agreed with quality management and its audits show a better performance (Kotter and Schlesinger, 1979; Schonberger, 1986; Keep, 1989; Bjornenak and Olson, 1999; Lin and Johnson, 2002) (p28)* • *When the organisation's management feels that certification relates to financial performance, it is more successful (Haversjo, 2000; Hendricks and Singhal, 2000; Heras et al., 2002; Sampaio, 2008) (p25)* • *Quality certification, if implemented in certain circumstances, may provide some improvement in performance indicators (Chenall, 2003; Walsh, 2006; Ross et al., 2008) (p28)*	27 How do you classify the management's interest in complying with the plan of quality internal audits (p27) 28 How do you classify the link between quality certification and the organisation's management performance (p25+p28) 29 Do you consider that ISO implementation helps measuring management quality (p25) 30 How do you evaluate employee performance after certification (p28) 31 Do you consider that continuous improvement is a more solid idea after certification (p27)

All the questions described until this stage refer to the organisation's management process in the perspective of non-financial performance. As to the organisation's financial performance, the following matters seem very relevant.

As already mentioned, some authors advocate very briefly that one can only manage what one can measure (Shellhorn, 2007) and others say that the good financial performance is usually a result of a quality management (Weldeghiorgis, 2004; Zairi,

1996). Other ideas suggest that organisations seeking success use something different like management tools such as BSC – Balanced Score Card, TQM – Total Quality Management and even ISO (Zairi, 1996; Scheimann and Lingle, 1996; Weldeghiorgis, 2004) because they allow a continuous management assessment. All these ideas will now be tested in the following sample of companies.

Table 11. Propositions and interview guide questions about Financial performance

Literature Propositions	Elements of Financial statements
• *Normally, indicators used by organisations are: sales growth, return on assets (ROA) and the return on equity (ROE), financial autonomy and net income (Kaplan, 2001; Walsh, 2006; Ross et al., 2008) (p29)* • *Organisations that use non-financial tools (such as BSC, TQM, ISO or other) to measure management quality end up having a better performance (Zairi, 1996; Weldeghiorgis, 2004) (p30)* • *Financial measures are the sufficient measure to assess management performance (Zairi, 1996; Weldeghiorgis, 2004) (p31+p32+p33)* • *Organisations' financial information is the most important one (Zairi, 1996; Scheimann and Lingle, 1996) (p34+p35)* • *Financial measures should be sufficient to explain performance (Zairi, 1996; Weldeghiorgis, 2004) (p33)*	32 After certification, how do you classify the evolution of sales growth (p30+p31+p32+p33+p34 +p35) 33 After certification, how do you classify the evolution of net income/sales (p30+p31+p32+ p33+p34+p35) 34 After certification, which is the evolution of the net profit/equity – ROE (p30+p31+p32+p33+ p34+p35) 35 How do you record, after certification, the evolution of the net profit/total assets – ROA (p30+p31+p32+p33+p34+p35) 36 After certification, how has the financial autonomy evolved (p30+p31+p32+p33+p34+p35)

3.8 Sample

3.8.1 Characterization of companies

As already mentioned, this analysis will be done under two perspectives: a) ISO 9001 certified companies and b) ISO 9001 non-certified companies. This study intends to be able to follow the suggestion of Yin (2009) in the use of "cross-case analysis". It should be noted that the source of information which follows was the same for all the companies – information was got from the CMVM site - Management Reports, Balance Sheet and Income Statement.

ISO 9001 certified companies

CB 5330 - Food and Retail: Company 1 and Company 2 - Food and retail: this ICB in Euronext list, obtained in May 2010, reaches a global value of 12,247,000 Euros, where Company 1 contributes with an income of 6,894,000 Euros, representing 56% of that value, and Company 2 with 5,353,000 Euros, representing the remaining 44%.

Company 1

The activity of this company is mainly food distribution (95.2% - holding) having late 2008, 1,411 stores in Portugal and 1,045 in Poland. 4.8% refer to production of fast-moving consumer goods (oil, margarine, drinks, toilet and care goods, ice cream, laundry detergents) of international brands. The geographical distribution of turnover was 49.4% for Portugal and 50.6% for Poland. This Group has presented, in the last five years, very solid results. To note, in 2008, a growth of 29%, dropping to 6% in 2009. The net return on sales (ROS) has

occupied a share of 2-3%; the return on equity has represented about 20% of assets. The combination of this performance contributes to a sound indicator of financial autonomy rating 26%-34%. The quality factor has to underlie these expectations, hence the company is ISO 9001 certified (since 2001). In terms of financial performance, this company recorded the following evolution:

Table 12. Economic and financial evolution from 2005/2009 – Company 1

Company 1	2009	Var % 09/08	2008	Var % 08/07	2007	Var % 07/06	2006	Var % 06/05	2005
1 Turnover	7,317,108	6.14%	6,893,737	28.86%	5,349,678	21.39%	4,407,175	15.12%	3,828,168
Operational res.	349,841	15.53%	302,815	34.48%	225,180	4.35%	215,797	-0.33%	216,503
2 Net results	223,267	26.87%	175,980	16.61%	150,909	0.00%	150,908	2.83%	146,761
3 Equity	1,065,695	14.45%	931,125	7.74%	864,205	12.63%	767,281	14.42%	670,565
4 Assets	3,178,944	-14.70%	3,726,565	19.17%	3,127,063	20.19%	2,601,721	9.65%	2,372,666
ROS (2:1)	**3.05%**		**2.55%**		**2.82%**		**3.42%**		**3.83%**
ROE (2:3)	**20.95%**		**18.90%**		**17.46%**		**19.67%**		**21.89%**
ROA (2:4)	**7.02%**		**4.72%**		**4.83%**		**5.80%**		**6.19%**
Self Financing (3:4)	**33.52%**		**24.99%**		**27.64%**		**29.49%**		**28.26%**
date of ISO 9001 certification: 2001									

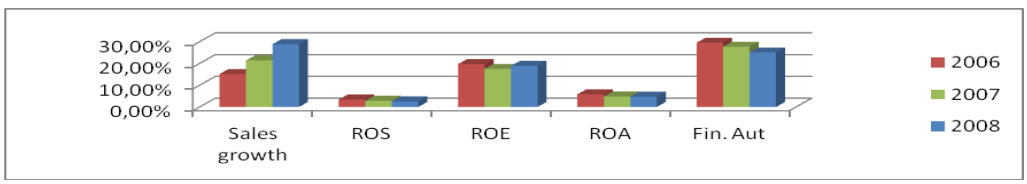


Figure 3. Economic and financial analysis - Company 1

If it can be stated that certification in the food business is linked to the market, as sales growth have shown it. Other performance indicators selected ROS, ROE, ROA and Autonomy have not followed that favourable evolution trend.

Company 2

Company 2 has, in 2009, about 35,000 workers in large-scale distribution. Its mother-company actively manages a portfolio of independent businesses, comprising the following vectors that compose the turnover: retail (78.6%), including the exploitation of 793 hypermarkets, supermarkets and specialty shops located in Portugal and Spain; telecommunications services (17.8%), landline and mobile telephone services; promotion, ownership and management of shopping centres (3.6%). The group is present in 12 countries: Portugal, Spain, United Kingdom, Germany, Greece, Italy, Ireland, Romania, United States, Brazil and Australia.

The economic and financial development recorded since 2005 has fluctuated a little, with a turnover growth of around 6%-12% and net profits, in function of the organisation's turnover, have recorded values of 6-7% between 2005 and 2007. Suddenly, in 2008, they stood at 0.7%, while turnover had grown 12%! Notwithstanding that, Company 2 records a very comfortable

financial autonomy – from 21% to 26% - which shows strength of its financial structure. This company recorded the following evolution:

Table 13. Economic and financial evolution from 2005/2008 – Company 2

Company 2	2008	Var % 08/07	2007	Var % 07/06	2006	Var % 06/05	2005	Var % 05/04	2004
1Turnover	5,353,000	11.99 %	4,780,000	5.89%	4,514,000	7.10%	4,214,926	n/a	n/a
Operational res.	175,000	-61.62 %	456,000	27.73%	357,000	6.56%	335,030	n/a	n/a
2 Net results	39,000	-89.08 %	357,000	5.31%	339,000	27.74%	265,379	n/a	n/a
3 Equity	1,563,000	-3.40 %	1,618,000	-4.54%	1,695,000	10.39%	1,535,430	n/a	n/a
4 Assets	7,306,000	3.99 %	7,026,000	11.15%	6,321,000	0.23%	6,306,688	n/a	n/a
ROS (2:1)	**0.73%**		**7.47%**		**7.51%**		**6.30%**		
ROE (2:3)	**2.50%**		**22.06%**		**20.00%**		**17.28%**		
ROA (2:4)	**0.53%**		**5.08%**		**5.36%**		**4.21%**		
Self Financing. (3:4)	**21.39%**		**23.03%**		**26.82%**		**24.35%**		
date of ISO 9001 certification: 2001									

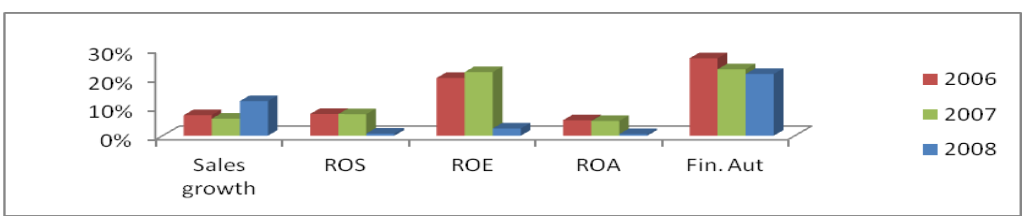


Figure 4. Economic and financial analysis - Company 2

Company 2, from the food sector, confirms the trends observed in Company 1. Although sales growth has not been so significant, it is consistent with what has been observed in previous years.

In interpreting the sector, it may be said that the food sector, reaching the public directly, must be safeguarded in terms of ensuring the product; hence, it is mostly certified and this is mainly associated with the organisations' size. Small entities like supermarkets or grocery stores, serving exactly the same target-population, are not ISO certified.

ICB 2350 - Construction: Company 3 and Company 4 - In the construction sector, which, (*Euronext*, May 2010) recorded a

global value of 7,524,000 Euros in 2008, Company 3, with a turnover of 1,868,000 Euros, represents about 25% and Company 4, with 835,000,000 Euros, represents about 11%.

Company 3

Company 3 is a group of Construction and Public Works - CPW, with about 3,000 workers. It deals with construction of infrastructures and civil engineering (78.4% of turnover), including highways, bridges, tunnels, hydraulic and railway infrastructures; activity of promotion and management of real estate (houses, shops, offices); environmental services (15.3% of turnover), contracted management of highways (representing 6.3% of turnover). From 2007 to 2008, the turnover showed a significant increase of 33% due to polarisation of the export market. Thus, sales net profitability amounted to 2% and 7.6% return on equity reached 12% in 2008, having been 28% in 2007 and in brief representing an average of 12% in the remaining years. The return on assets placed between 1% in 2008, 3% in 2007 and an average of 2% in the remaining years. As a result of this evolution, the financial autonomy ranges from 9% in 2008 to 19% in 2005, reflecting some loss in the company's financial structure. In terms of financial performance, this company recorded the following evolution:

Table 14. Economic and financial evolution from 2005/2008 - Company 3

Company 3	**2008**	**Var % 08/07**	**2007**	**Var % 07/06**	**2006**	**Var % 06/05**	**2005**	**Var % 05/04**	**2004**
1 Turnover	1,868,731	33.30 %	1,401,900	7.16%	1,308,233	-5.27%	1,381,001	n / a	n / a
Operational res.	192,740	30.07 %	148,186	76.01%	84,194	-44.97%	153,010	n / a	n / a
2 Net results	39,770	-63.09 %	107,745	186.29 %	37,635	0.26%	37,536	n / a	n / a
3 Equity	341,317	-11.79 %	386,926	27.36%	303,795	-4.51%	318,153	n / a	n / a
4 Assets	3,709,651	9.55 %	3,386,326	95.18%	1,734,992	5.45%	1,645,296	n / a	n / a
ROS (2:1)	**0.73%**		**7.47%**		**7.51%**		**6.30%**		
ROE (2:3)	**2.50%**		**22.06%**		**20.00%**		**17.28%**		
ROA (2:4)	**0.53%**		**5.08%**		**5.36%**		**4.21%**		
Self Financing. (3:4)	**21.39%**		**23.03%**		**26.82%**		**24.35%**		
date of ISO 9001 certification: 2001									

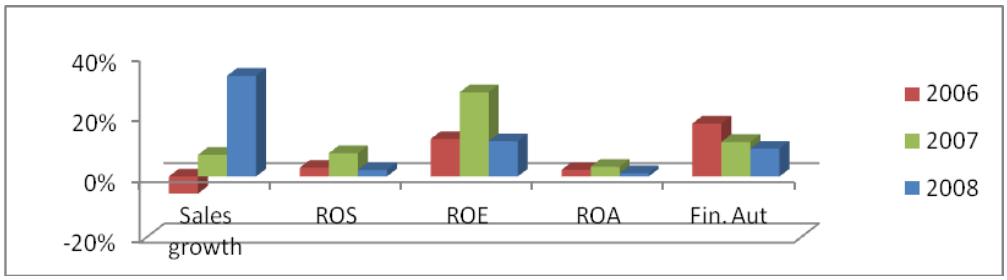


Figure 5. Economic and financial analysis - Company 3

This company's quality certification dates back long ago, but the subsequent reorganisation of its structure made ISO 9001 to be in force just from 2004. In terms of sales, 2008 was a very good year, registering an increase of about 50%, but in terms of the remaining indicators, this positive evolution did not occur.

Company 4

This company is one of the largest Portuguese construction groups, employing about 2,000 workers. Turnover, by activity, is distributed as follows: building and infrastructure construction (86.4%): houses, schools, hospitals, offices, shops, industrial establishments, hotels, stadiums, highways, bridges, among other projects; construction, sale and maintenance of industrial facilities (7.6%): production and assembling of steel structures, aluminium facades and carpentry products, design and sale of electrical, mechanical and hydraulic systems, railway infrastructures, security and access control systems; contracted management of infrastructures and public services (5.8%): infrastructures (roads, parking lots, highways) and public services (water treatment and distribution); real estate management and promotion (0.2%). The geographical distribution of business is as follows: Portugal (50.1%), Angola (36.6%), United States (4.8%), Mozambique (2.7%) and others (5.8%).

In terms of economic and financial evolution from 2007 to 2008, the turnover showed a significant increase of nearly 52%, and in 2009 recorded 12%. The progress of the profitability indicators showed the following values: sales net income – amounted to between 1% and 2%, and return on equity, from 2006 to 2009, grew from 4.7% to 9%, albeit with an oscillating growth in 2007 and 2008. The financial autonomy of 19% in 2006 registered 9% in 2009, evidencing some weakness in the financial structure.

ISO 9001 non-certified companies

In these companies, as there is not a "cut off" element concerning quality certification, because they are not ISO 9001 certified their financial economic analysis is not relevant and has not been prepared.

ICB 5550 - Company 5 and Company 6 - In 2008, in the media industry (from Euronext, May 2010) totalled 1,439,000 Euros, where Company 5 records 270,000 Euros income and represents 19% of that amount, and Company 6, with 122,000 Euros, represents 8%.

Company 5

This Group is among the leading references of Portuguese media. Turnover, by activity, is distributed as follows: operation of a television channel and audiovisual production (73.7%): exploration of the TVI general channel and production of television programs (NBP; first channel in terms of soap operas, series and movies); music production and film distribution (10.8%): edition of music CDs and DVDs, events organisation, marketing of television rights, DVD distribution; operation of radio stations

(6.2%). Turnover (in addition to divested activities), by source of revenue, is distributed by sales of advertising space (79.7%), CD and DVD (8.2%), magazines (3.8%) and other (8.3%). The total turnover (in addition to the divested activities) takes place in Portugal. The company, owned by the Group under analysis, is representative of a television channel with approximately 550 employees.

The Group's net profit reached, in 2008, the amount of 19.8 million Euros, a decrease of 34% over the previous year.

Table 15. Economic and financial evolution from 2005/2008 - Company 4

Company 4	**2009/2010**	**Var % 09/08**	**2008**	**Var % 08/07**	**2007**	**Var % 07/06**	**2006**	**Var % 06/05**	**2005**
1 Turnover	936,263	12.16%	834,751	51.65%	550,451	-4.14%	574,207	8.27%	530,362
Operational res.	49,335	-3.59%	51,172	117.83%	23,492	-14.80%	27,572	457.24%	4948
2 Net results	11,631	42.03%	8189	-33.75%	12,361	111.99%	5831	1311.86%	413
3 Equity	130,282	-6.15%	138,826	1.90%	136,243	9.74%	124,150	5.36%	117,830
4 Assets	1,524,054	10.41%	1,380,360	69.83%	812,797	26.20%	644,050	-6.27%	687,142
ROS (2:1)	**1.24%**		**0.98%**		**2.25%**		**1.02%**		**0.08%**
ROE (2:3)	**8.93%**		**5.90%**		**9.07%**		**4.70%**		**0.35%**
ROA (2:4)	**0.76%**		**0.59%**		**1.52%**		**0.91%**		**0.06%**
Self Financing. (3:4)	**8.55%**		**10.06%**		**16.76%**		**19.28%**		**17.15%**
date of ISO 9001 certification: 2004									

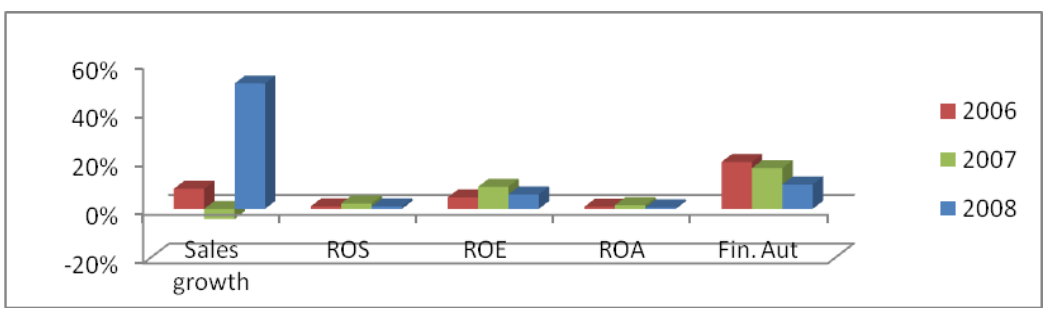


Figure 6. Economic and financial analysis - Company 4

Company 6

This company consists of a Group with around 900 employees and specialises in the publishing of newspapers and magazines in the areas of economy, sports, general culture, computers and others. Turnover, by activity, is distributed as follows: newspaper publishing (71.4%) and magazine publishing (28.6%). In the perspective of the revenue source, it is divided into newspapers and magazines sale (42.9%) and advertising space sale (41.8%) and others (15.3%). The total turnover takes place in Portugal. The Company's economic and financial evolution has not disclosed, from 2007 to 2008, very satisfactory values due to a difficult international macroeconomic environment, which had impacts on domestic demand and on the level of Portuguese economic recovery.

Interviews results achieved in these companies will now be analysed and discussed.

3.9 Outcome

3.9.1 Results and discussion

The whole literature review, present along this study was framed in the trilogy of perspectives: institutional, contingent and resources (RBV). According to the defined criteria of results defined, it will be displayed by the end, a cross case analysis. So, to begin with the opinions obtained in the interviews of the six companies according to the most important issues (points 4,5,6,7 and 8) of ISO 9001 are now described.

Quality Management System (point 4 of ISO 9001)

This was the first topic to be addressed in the interview guide and it is well known that Quality Management System needs a definition of quality policies and objectives something belonging to the institutional theory – a form of normative rationality (Ginsberg 1994).

Companies from the food sector provided immediate and concise answers. In company 1 it was stated: *"...The review and updating of Food Quality and Safety Policies, and the resultant change in the processes, are a commitment of the Organisation, aiming at its greater efficiency...";* in company 2, this issue was taken even more seriously: *"...those quality policies and objectives have always existed even before ISO 9001 certification. The maintenance of those policies and objectives is an ongoing concern of top management in order to minimise business risk."*

In this sector, quality is important because there is something called "social responsibility". And, at this point, one should quote legitimacy theory, because it reflects public expectations concerning organisations' behaviour (Gary, 2002). Heras *et al.* (2008) referred that ISO 9001 certified companies, by their size or by their concern for the market, before being ISO certified, had already quality practices. In other words, quality management may exist even without a regulation that substantiates it, but needs strict principles and cultural values (Schein, 1992; Neergard 2002).

In the construction sector, statements from company 3 confirm it: *"...quality policies and objectives were better explained after ISO certification".* In the competitor (company 4) the answer was: *"...values of top management at the quality level. Compliance with national and international regulations, in particular with regard to the Product/Service Certification and to the proper Quality Management System functioning. Since 2004, the company has the quality process (ISO 9001) quality management system implemented, with clearly explained quality policies and objectives".*

These answers provide an explanation to the reason of certification, in the sense of ascribing company reputation (Rahman *et al.*

2007) or legitimising its relation with others (Gary, 2002; Pillips, 2005).

Food companies answered similarly. One company (1) stated: *"...we have always had some quality culture, bur now its practices mean that everyone knows what quality is".* The other company (2) clarified that even before ISO 9001 they had quality practices: "*...quality culture is shared by all the principles that steer our management. It could be said that, after certification, there has been a greater awareness of quality".* In the construction sector, company (3) referred: *"...quality is already a topic that is part of our daily work".* It seems that quality has been a very gradual process of attachment, but, presently, people are used with the concept. In company (4), the answer was different, suggesting more the idea of continuous improvement: "*...quality has to be present in everything that is done. The organisation's culture is a reflection of all the events that mark its life; quality certification was one of those, now others will follow".*

The culture of the organisation, geared towards quality, is a factor that may contribute to an easier implementation. In this case, culture could perhaps be envisaged as a mix of the institutional theory (Levitt and Nass, 1989; Chua and Petty, 1999; Lowrey, 2005; Leiter, 2005) and the RBV (Wernerfelt, 1984). It may be stated that organisational culture (Schein, 2002), considering the more intrinsic aspects – standards, rules, regulations, procedures and routines that typify and condition it – would be something suiting this company. These artefacts (Kujala, 2002) may contribute to a greater flexibility being able to be considered as a resource which they attach to, in order to make a change.

The change in the organisations processes' streamlining should be something consequent (Germain and Spears 1998; Benson *et al.*, 1991). However, answers obtained were not so unanimous. In the food sector, in company (1) it was said that due to the procedures and regulations the certification process removed some agility:*"...in face of the procedures set, a little streamlining is lost facing new situations, gaining on the accuracy achieved."* Company (2) referred leanness, as to new situations as: "*...very good, as it is associated with management practices, that is fostered by the implementation of the ISO 9001 standard, which frames our thoughts and actions."* This company may be more used to quality practices, once quality certification is older, being these management practices more institutionalised.

In the construction sector, answers were not far from this reality. For one of the companies (3): *"...the process approach requires more flexibility towards new situations"* while for the other (4): *"...quality certification was not the factor that forced us to be agile; in addition to the fact that we have it, we must also meet market factors and competition – suppliers and the technology, that require us to be agile."*

In short, for the Quality Management System, the sequential order of predominance from the Theoretical Framework is: institutional theory, resources theory and contingency theory.

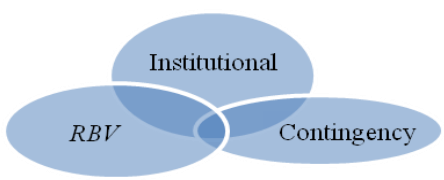


Figure 7. Theoretical Framework

The institutional theory because it is associated with the formal structure of organisations (Scott 1995), Wiele and Brown (2002) and Gary (2002); RBV (resources based view) is applicable because the allocation of resources is crucial (Wernerfelt 1984) and the contingency theory because market dynamism (Laats 2005) can affect any decision. Yet it is well known that ideas and principles of quality need top

management involvement and determination.

Management Commitment (point 5 of ISO 9001)

Top management commitment in the implementation of a quality process seems fundamental. Respondents confirmed the importance of top management about quality issues. Indeed, in company 1 the answer was illustrative*: "...high involvement, given that it must be attentive to customers' needs to secure its business."* This applies to all firms interviewed: senior managers were unanimous in recognising that quality must be inherent to the organisation' top hierarchy. It seems that the institutional theory fits these perceptions (Scott, 1995; Oliver, 1997). Literature has been confirmed (Schein, 1992; Argyris and Schon, 1996), even by ISO 9001 non-certified companies.. Usually, the institutional theory is used when studying the adoption of practices or strategies in the organisation in order to survive, knowing that it must adapt to environmental conditions (DiMaggio, 1983). Top management strength must be inherent to this whole change.

Can it be said that, as a consequence of quality certification, such commitment may reach the definition of the functions in any organisation? Company 1 said that "*...after quality certification, and under the scope of quality it becomes a more facilitated action by the requirement of a clear definition of all functions - directly or indirectly";* and in company 2: *"...we had such a description before, but after certification it became clearer, as it was embodied in procedures".* It could be said that this is a very institutional perspective (Oliver, 1997).

In the construction sector, the position was somehow different. Company 3 stated that certification contributed to a clarification of functions: *"...the description and organisation of the functions has clearly been improved and systematised with the implementation of the Quality Management System"* but in company 4: "*...quality certification was not the engine and lever of decision making in the organisation. The description and the organisation of the functions has clearly been improved and systematised with the implementation of the Quality Management System, but we already had it".*

This company did not seem willing to ascribe much importance to quality and its effects. The mastery of other management techniques – such as Balanced Scored Card (Mc Adam and Oneill 1999; Kaplan and Norton, 2001; Hoque, 2003) – seems to have contributed in a great extent to the successful implementation of quality certification. It could be asserted that, after Neergard (2002), this company had quality regardless of certification.

It was interesting to note that non ISO certified companies indicated that the organisation's culture should be changed after certification.

Concerning the opinions of quality certified companies culture was an elected issue. In company 1: "*...quality culture is part of the organisation's culture, and it has always been a pillar of our Group's Mission"* and in company 2: *"...our quality culture is shared by all the management principles. It could be said that, after certification, there has been a greater awareness of quality*".

Both companies belong to the food industry and it is interesting to note that there are entities where quality is handled with a higher proximity to the final customer what means some responsibility on performance (Phillips, 2003).

In the construction industry Company 3 stated: "*...yes, quality is a topic that is already part of our daily work"* and company 4 added*: "...quality has to be present in everything that is done. The organisation's culture is the reflection of all the events that mark its life. Quality certification was one of those moments, now others will follow".*

It could perhaps be noted that culture considered by (Schein, 1999; Kujala, 2002) becomes a resource that, either as knowledge

based (Prahalad and Hamel, 1990) or a dynamic capability based *(*Teece *et al.*, 1994; Dirickx and Cool, 1989), results in increased competence. However, these capabilities must be triggered from top management of any organisation knowing to lead the organisation's strategies as an inherent responsibility.

In summary, for Management Commitment the case study revealed the following sequential order of positioning of the theories: institutional, resources and contingency.

Whilst it is very important to have an orientation and involvement of the organisation's top management to allow an easy adaptation to a new process, still it is relevant to use the resources to do so.

Resources (point 6 of ISO 9001)

This was the third topic addressed in the interview guide on a double perspective – human resources and material.

Human Resources

Companies from the food sector argued that quality has always been a management priority. One of them (1) stated that *"Clearly yes..."* while another (2) said *"...there was an easier explanation, almost normative need, to assess employees on the basis of their performance."*

It seems useful for organisations to be able to cling to a regulation to justify performance assessment appealing for the institutional theory (Levitt and Nass, 1989; Chua and Petty, 1999; Lowrey, 2005; Leiter, 2005). Due to quality implementation, employees have more training and more knowledge. Culture in an organisation (Schein, 1999; Kujala, 2002) becomes a resource either as knowledge based (Prahalad and Hamel, 1990) or dynamic capability perspective (Teece *et al.*, 1994; Dirickx and Cool, 1989) resulting in higher competence and better performance. As to a greater involvement of organisation's employees in consequence of ISO 9001 certification, literature (Deming 1991; Juran 1989; Garvin 1988) argues that, there is a better training of employees. Different opinions arise.

Companies from the construction sector: in one of them (3), it was stated*: "...insofar as they had to be covered by the design and implementation of its process, they were involved. Motivation to quality is still very difficult*". Here it is being gradually attained while in the other (4) it seems more at ease referring *"...insofar as they had to be covered by the design and implementation of its process, people were involved more than motivated".*

Non-certified companies referred that they have ongoing performance assessment associated to management objectives. Any quality process encompasses organisation employees through permanent audits of the process. RBV as to knowledge or competence (Hamel and Prahalad 1990; Somsuk 2010) has a full place in this topic. However, it does not mean that, in their recruitment (upstream), a specific knowledge of this matter has been met. Literature considers that employee selection and recruitment in organisations should be done considering persons with *curricula* specialised in quality (Dillard and Tinker 1996). In this case study none of the certified companies in quality uses this form of recruitment, unless it is selecting someone for the specific area of Quality clarifying that: *"...we are not yet at that level of evolution".*

There seems to be a kind of inertia. This refers to literary frameworks from Schein (1999), Kujala (2002) and Hofstede (2002), who argue that cultural aspects are really crucial in organisations' management. Culture, also becomes a resource that can enhance knowledge (knowledge based from Prahalad and Hamel 1990) or capacity (dynamic capability based, Teece *et al.* 1994; Dirickx and Cool 1989), and may result in higher competence able to foster a better performance. This also depends on

material resources.

Material

The material resources consist of acquisitions necessary to implement the organisation's daily routine, plus the process of quality management. Yet they assume no significant values that may lead managers to consider such expenditure as an intangible asset. It was stated: *"...we consider expenditure on quality as a compulsory investment. Quality costs do not assume significant relevance to be considered an asset".* Yet, the need to consider these costs of the quality process as an intangible investment has not been felt (Wiele and Brown, 2002; Tolbert and Zucker, 1996). The interviews contradicted literature. Besides this, in addiction, companies do not classify the expenditure on quality by type of costs. This classification by nature of expense could help, to better manage organisations' internal processes (Yang 2008; Ittner and Larcker 2003; Kaplan and Norton, 1991; Shirley, 1997).

The opinions of the construction sector show this. Company (3) had a surprising answer, stating: *"...yes, it would be most interesting, but the company has not such notion".* Company 4, in the same industry, had a completely different approach and it was stated: *"...it is not relevant. For us, quality is a principle, a culture that is shared with others. The amount of time employees spend on handover quality is not quantified. It is almost organisation's culture".*

The organisations inquired about the costs issue do not carry out a quality costs management but they say that, they are able to identify, for each construction work, direct quality costs because they need the guarantee factor.

As to the theoretical plan applied, there is a triangulation between the three theories, with a predominance of the resources theory, followed by the institutional theory and, finally, the contingency theory.

It is now important to know how organisations see the adequate supply of their product/service considering an efficient use of resources.

Product/Service (point 7 of ISO 9001)

Concerning the argument that claims quality associated with organisation's sales (Keogh 1994), it was unanimously embraced by all, ISO quality certified companies and non-certified companies, respondents. Within the food sector, in one company (1) it was registered: *"...certification – but especially the QMS implementation – makes a decisive contribution to sales";* the other company (2) stated: *"...quality certification is related to the market; hence, sales reflect the market value".*

In the construction sector, company 3 clarified: *"...it is not directly, but rather indirectly linked, because we often carry out public works where the final user is different from the contractor".* The other organisation (4) explained *"...sales and quality are closely linked, because the market requires certification."*

In these situations, there was almost like an invisible force pushing companies towards certification. The coercive isomorphism that summarises society's expectations, the stakeholders' (Phillips, 2003) expectations in general, is entirely framed.

Non-certified companies from the communication sector defended this issue very well. Company 5 stated *"...this is true, indeed! Here, we just record services provision. If our programming does not have quality, it does not have audiences and the publicity, which is the financial inputs factor – does not take place."* Company (6), from the editorial communication, clarified *"...this is true, indeed! If our publications do not have quality, they do not have readers and advertising, which is a revenue input factor, does not take place."*

As to the question of whether certification could be considered a competitive advantage (Porter, 1985; Senge, 1994; Basu, 1997; Stern, 2001), the interviewees' answers were

very interesting. In the food sector, company (1) clarified: *"...yes, it is possible to standardise processes and, consequently, products. It is also a competitive advantage, when communicated to the customers, because it certifies the accuracy and care of the product we launch"*. In other words, the defence of rigor in terms of meeting consumer expectations is considered a competitive advantage. The opinion of the other company (2) was assertive: *"....the market itself makes it be a competitive advantage".*

In the construction sector, it has been stated (3) that certification is a market advantage: *"...of course it is".* In the other company (4), the answer was given *ad contrario*, stating: *"...we would rather say that non-certification is a competitive disadvantage".* For this company, the fact of not being ISO certified is a situation that places the company out of the market. This calls for contingency theory (Laats, 2005).

Besides, literature refers that quality certification is usually related to the product lifecycle (Stern, 1991; Chenall, 2003; Walsh, 2006). Companies from the construction industry, referred: *"...I think that when a product is already successfully placed on the market we have to think of innovating, and quality must be inherent*".

Quality certification appeals the institutional perspective for the mimetic isomorphism but it is also associated with the contingency of the market and the quality process itself may be considered a resource (RBV – resources based view). Thus the preponderance of the theories from the theoretical framework is as follows: resources theory, contingency theory, institutional theory.

This whole process, if viewed in terms of resources optimisation, whether human or material, necessary to obtain a product/service, may help to improve processes, but only if the prospect of continuous measurement, analysis and improvement are taken into account.

Measurement, analysis and improvement (point 8 of ISO 9001)

All these organisations were questioned about the use of quality as a management tool (Kotter and Schlesinger, 1979; Schonberger, 1986; Keep, 1989; Bjornenak and Olson, 1999; Lin and Johnson, 2009), only one company from the food sector (2) and another from the construction sector (4) used it.

The first (2 from the food sector) is implementing Kaizen methodology, and the second (4 from the construction sector) is implementing the BSC - Balanced Scorecard methodology. These tools are features that streamline processes.

As to whether the process quality can be defined as a quality management system, the following situations emerged: one company (1), from the food sector, clarified: *"...yes, due to the fact that it has, in its metrics, some management indicators, thus allowing measuring its performance."* The other company (2) added: *"...yes, it helps measurement through indicators concerning the processes that compose the Quality Management System."* In the construction sector, it was referred (3): *"...the Quality Management System, establishing operating rules and procedures, facilitates management."* The other company (4) also confirmed: *"...the Quality Management System, may make management easier."*

In conclusion the applicable theoretical approach considers the institutional aspect – through its mimetic and normative isomorphism, the resources based view, and the contingency.

The five topics of ISO 9001 were considered in concurrent analysis and it is important now to make a comprehensive summary of these results through a cross case analysis (Yin, 2009).

Cross case analysis

The opinions obtained through interviews were framed, or not, in the associated literature and considered as to *Companies*

with and without ISO 9001.

Quality Management SystemCompanies with ISO 9001: 88% of respondents confirmed literature regarding the changes to occur in management, the involvement of top management and the fulfilment of customers' expectations; the remaining 12% reported that the quality process frequently creates a web of rules and procedures that do not facilitate the streamlining of processes in organisations.

Companies without ISO 9001: said that only the quality process could respond to meet customers' expectations and although they have not embarked on a formal quality process (ISO), they considered to have good quality.

Management Commitment Companies with ISO 9001: 69% of the results agreed on the induction and self-confidence of top management on the motivation for a Quality Management System. From these only 50% of respondents confirmed that ISO leads to a better definition of the structure.

Companies without ISO 9001: all respondents reported that they managed quality according to the object of their activity. Specifically as to a greater self-confidence caused by ISO quality, only a third (29%) confirmed literature.

Resources Companies with ISO 9001: 56% of the results confirmed the ideas of ISO - employees' involvement, and the top management commitment to the organisation's sales. Under a theoretical point of view one must refer the knowledge based (Prahalad and Hamel, 1990) and dynamic capability based models (Dirickx and Cool, 1989; Teece *et al.,* 1994). However, the knowledge on quality as a criterion for selecting new candidates in organisations (Dillard and Tinker, 1996) was denied. They stated that this would be done only for the quality sector. As to the association of resources to ISO 9001, 44% of respondents did not confirm literature as to:

- the classification of quality costs as an intangible assets (Huselid and Becker, 1998); decoupling situation shown by the institutional theory of Westphal and Zahajac (1994) was not identified; the need to identify quality costs by nature was not felt (Yang, 2008).

Companies without ISO 9001: the perception that these entities have on quality certification and the involvement of top management and its relationship with the organisation sales is very relevant.

Product / Service Companies with ISO 9001: for them ISO Quality, is an advantage and applies throughout the product/service life. The theoretical assumptions, like Resources (RBV) view, were confirmed: Knowledge of product/service and of the environment refers to the KBV - knowledge-based view (Prahalad and Hamel, 1990) and consequent associated dynamic capability based (Dirickx and Cool, 1989; Teece *et al.,* 1994). Opinions revealed that there is always need to be alert to contingent or random situations that may arise and there should be the notion that the adaptation to the market dynamism (Laats, 2005; Dawson, 2009) is permanent.

Companies without ISO 9001: *a*lthough non ISO certified, they recognise the fact that being certified is a competitive advantage. This particular opinion explains it: *"with the ISO certification, we would have other quality standards and audiences that are now our flag of success, in a higher level of demand, would probably drop..."* It is interesting to note that this phenomenon of ISO quality, depending on the market, may also have its negative side, which, under this manager's opinion, could mean the framework of the people's average cultural level.

Measurement, Analysis and Improvement Companies with ISO 9001: 75% of the opinions confirmed the quality process helps to measure the organisation's performance. If the organisation is using some tools of management control (special resources) that acts upon the inner formality – mimetic isomorphism (Levitt and Nass, 1989; Chua and Petty, 1999; Lowrey, 2005; Leiter,

2005) the objectives will be easily reached. However, the factors - measurement, analysis and improvement are regulated by mechanisms that appeal to the institutional theory. In addition to this institutional/RBV dualism, there are unexpected or contingent elements that may occur and shift the path initially set (Laats, 2005; Dawson, 2009).

As to the quality associated with the organisation's current management, only 50% of respondents confirmed this. Within negative responses, one company stated that quality certification took away some agility and the other said that they had to be innovative and creative agents, regardless of it.

Companies without ISO 9001: the companies said that higher quality should translate into better results, clarifying: *"...otherwise, better, what for than for best results, but these are always financial."*

On a financial level and taking in account the economic and financial benchmarking between the surveyed companies, it cannot be said that there is a direct causal link between quality and financial performance. Indeed, when respondents were questioned about this matter, they clearly explained: *"...the financial results we have are due to the fact that we are certified in quality among others; if we were not ISO certified, they would not even be these; but there is a multitude of other factors which should be considered to explain the mentioned financial indicators".*

And with these "other factors" one connects this research to the contingency theory, suggesting that unexpected events may affect the decision making process (Laats 2005), or even the market environment that is increasingly unpredictable (Dawson, 2009).

4. Conclusion

It is now important to summarise the interpretation of these results, subsequent to the aim of this research associated to the efficiency of ISO 9001, and insert them in the theoretical framework according to the above mentioned criterion. The cross analysis of results obtained by the opinions of interviews divided by the five topics considered, inserted in the theoretical scope according to the defined criteria, in synthesis, allows the final following scheme summing the RBV, institutional and contingency theories.

From the case study results an ISO 9001 characterisation was carried out on a theoretical framework approach. The resources theory (RBV) turns out to be the one that represents a more relevant framework in terms of the opinions obtained along the interviews. Knowledge based (Prahalad and Hamel, 1990) and dynamic capability models (Teece *et al.*, 1994; Dirickx and Cool, 1989) were the most nominated. Also from the assumptions inherent to the institutional theory - mimetic, opinions confirm that the control tools existing in the organisation are mostly associated to the quality process (Levitt and Nass, 1989; Chua and Petty, 1999; Lowrey, 2005; Leiter, 2005).

Shellhorn (2007) posits that everything that is intended to be managed should be measured. Resources are measurable but they must be previously implemented under an institutional rule. ISO 9001 is an institutional artefact. But all the rules and procedures may be changed at any time by unexpectable events (contingency of the market).

Literature reveals that there is a connection between management performance and financial results, being the former able to be measured by the latter (Zairi, 1996; Weldeghiorgis, 2004). It was interesting to note, through the analysis of the interviews, that non-certified ISO 9001 companies were those advocating more strongly this link (certified companies interviewed had the notion that this link goes beyond ISO certification). This idea is still new for them, because they did not start such a process. In

general the interviewed said that the higher quality of the organisation management the better level of its results. Yet it is well known (Dawson, 2009), that the current market is endowed with such a dynamism and unpredictability (Laats, 2005) that can bias any pattern of an organisation's optimal functioning. For ISO certified companies the explanation of their choice was explained *ad contrario* explaining that a non quality certification would become a competitive disadvantage. As a final conclusion one could say that ISO 9001 efficiency is more relevant in companies that have a devoted belief in quality spread out through the entire hierarchy.

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